United Heckathorn Superfund Site

May 27, 2014

Outline

- Site background
- Current site status
- Tier 1 Sediment Study
- Tier 2 Sediment Study
- Source Identification Study
- DDT Fate & Transport Study
- Fish sampling results
- Next steps and schedule

Cleanup History

- Initial response (1990-1998)
  - 3,300 cubic yards of DDT-contaminated soil removed from upland area
  - Dredged 107,000 cubic yards of contaminated sediment (3 tons DDT) from Lauritzen Channel and Parr Canal
  - Capped upland area with concrete to prevent erosion
- Monitoring and additional investigations
  - Sampling of fish, mussels, sediment, and water
  - Five Year Reviews in 2001, 2006, and 2011

United Heckathorn Site

Current Site Status

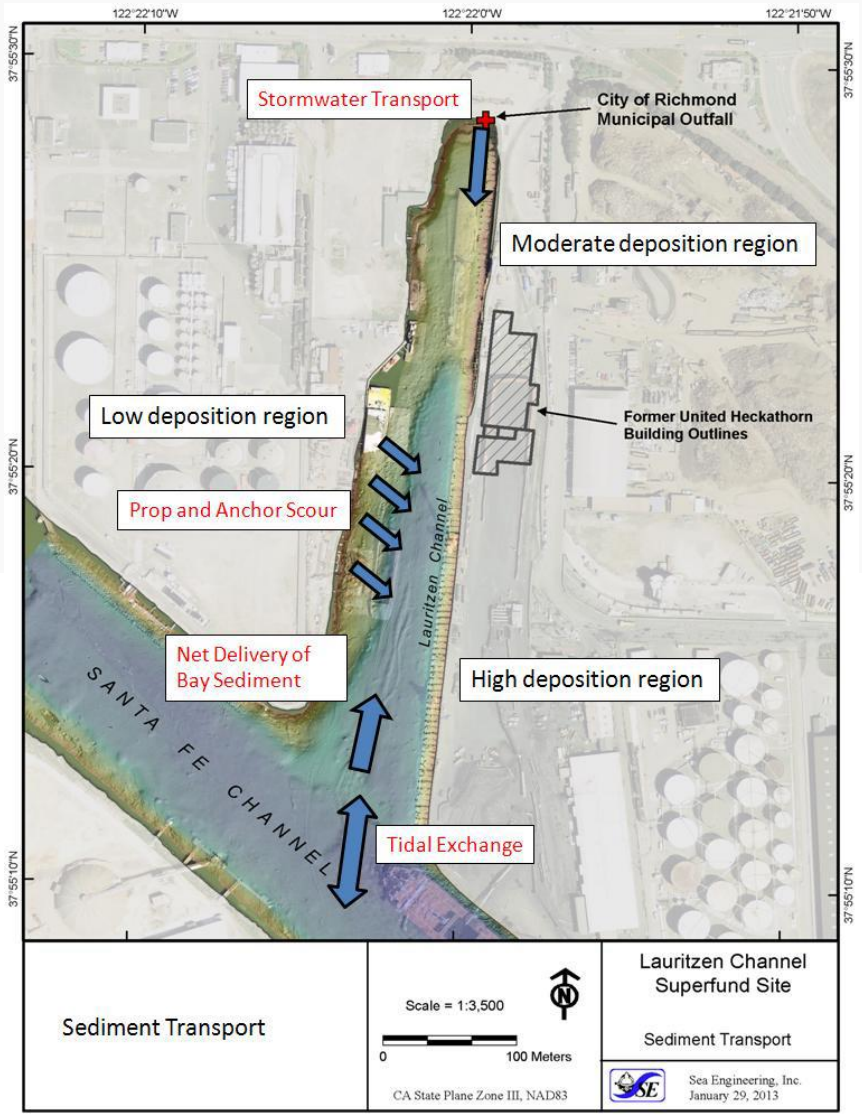
- The upland cap remains intact and protective.
- DDT levels in the Inner Richmond Harbor, Santa Fe Channel and Parr Canal have decreased significantly.
- DDT levels in Lauritzen Channel pose a potential long-term risk to human health through fish consumption.
- DDT levels in Lauritzen Channel pose a potential ecological risk to fish-eating birds and mammals.

Preventing Exposure

- Fenced area around Lauritzen Channel prevents access; active marine terminal subject to homeland security requirements
- State of California updated fish advisory in 2011; fish advisory signs posted

Tier 1 (Basic) Sediment Study

- Areas of deposition and erosion of sediment
- Multi-beam and side-scan sonar create images of the channel bottom
- Natural and anthropogenic forces



Tier 2 (Detailed) Sediment Study

- Current and turbidity monitoring
- Particle tracking
- Sediment erosion analysis
- Sediment transport modeling

Source Identification Study

- Groundwater
- Embankments and seeps
- Pilings
- Undredged sediments
- Other sources

DDT Fate & Transport Study

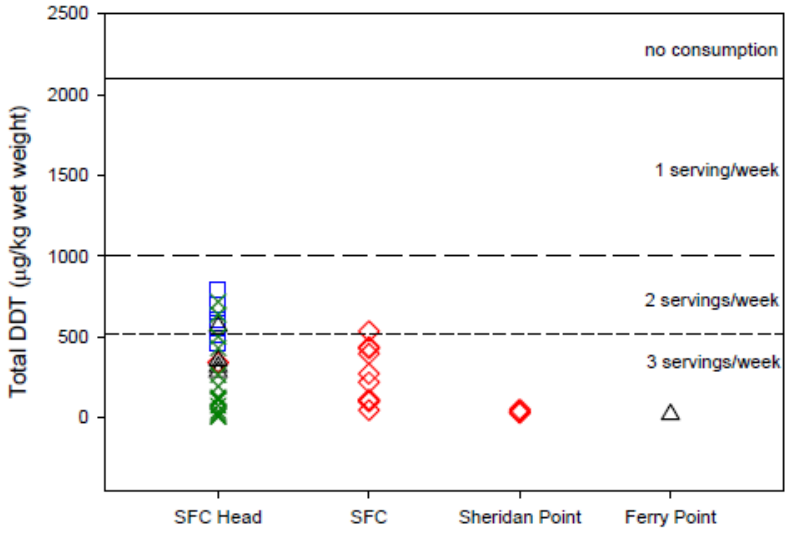
- Passive samplers
- Sediment cores
- Trends
- Sources and sinks

- Approximately 66,000 yd^3 of contaminated sediment in Lauritzen Channel
- Approximately 350 kg of DDT in those sediments

Fish Sampling

- November 20-22, 2013
- Local fisherman: Brian Collier, Fishin' Game Fishing Charters
- 45 samples analyzed including shiner surfperch, barred surfperch, white surfperch, and jacksmelt

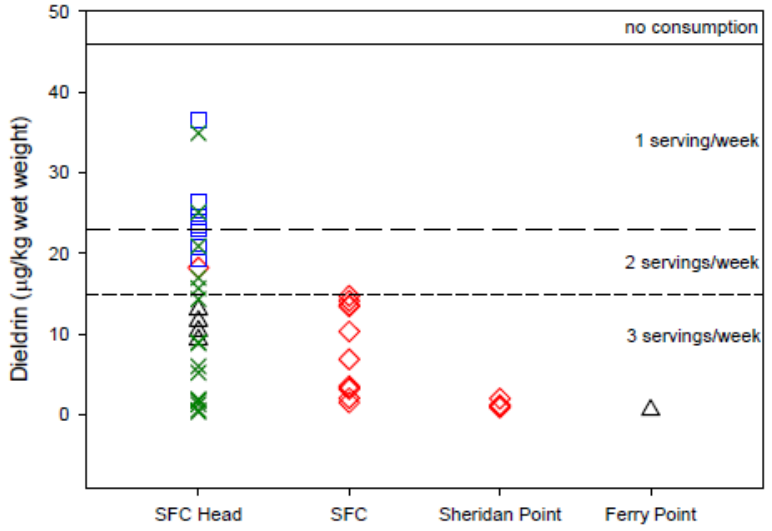
November 2013 Fish Results



Notes:

- Barred Surfperch
- Shiner Surfperch
- White Surfperch
- Jacksmelt
- Advisory Tissue Level - 520 µg/kg
- Advisory Tissue Level - 1,000 µg/kg
- Advisory Tissue Level - 2,100 µg/kg

µg/kg micrograms/kilogram
DDT dichlorodiphenyltrichloroethane
SFC Santa Fe Channel



Notes:

- Barred Surfperch
- Shiner Surfperch
- White Surfperch
- Jacksmelt
- Advisory Tissue Level - 15 µg/kg
- Advisory Tissue Level - 23 µg/kg
- Advisory Tissue Level - 46 µg/kg

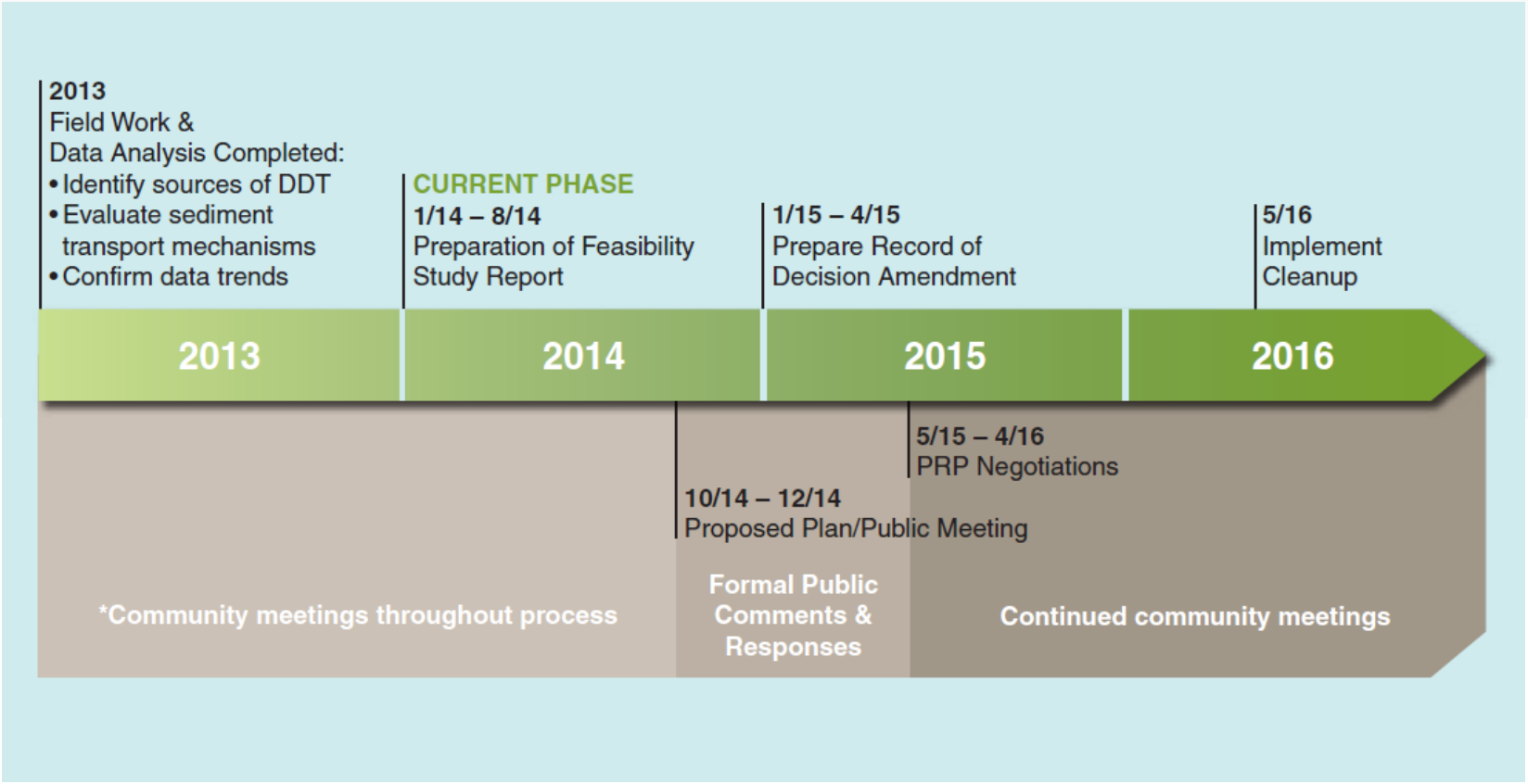
µg/kg micrograms/kilogram
DDT dichlorodiphenyltrichloroethane
SFC Santa Fe Channel

Reference: Office of Environmental Health and Hazard Assessment (OEHHA). 2011. *Health Advisory and Safe Eating Guidelines for San Francisco Bay Fish and Shellfish.* Margy Gassel, Ph.D.; Robert K. Brodberg, Ph.D.; Susan A. Klasing, Ph.D.; and Lizette F. Cook, M.S. May.

Next Steps

- Finish DDT Fate & Transport Study
- Update Remedial Action Objectives
- Prepare Feasibility Study: Compare remedial alternatives based on nine criteria
- Propose a cleanup plan for public comment

Cleanup Schedule



Contact Information

Please contact us if you have any questions about the cleanup or community involvement, or would like to be added to the site mailing list:

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Information on the United Heckathorn Cleanup:
www.epa.gov/region09/unitedheckathorn